Socio-Economic Review of Appalachia

The Evolving Appalachian Economy

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Abstract: This study examines the Appalachian economy thirty years after the landmark report that led to the formation of the Appalachian Regional Commission. Appalachia's industrial composition continues to retard its growth, but Appalachia today is not a stagnating, underdeveloped, lagging region. On the contrary, much of the region is growing faster than the nation in employment and earnings, and Appalachia is attracting jobs in high-paying, growing industries. Yet parts of Appalachia have neither recovered from the diminishing employment opportunities in manufacturing and mining nor attracted or spawned their shares of the nation's growing high-wage industries. An accurate description of Appalachia today must focus on its diversity. Appalachia is a dynamic, growing region that contains some of the poorest areas in the nation.

Acknowledgments: This research was conducted under contract to the Appalachian Regional Commission. The interpretations and opinions expressed in this paper are those of the author and do not necessarily reflect official positions of the Commission.

INTRODUCTION

An underdeveloped, lagging region — this is the century-old reputation of Appalachia. In 1964 the President's Appalachian Regional Commission again drew attention to those regional adjectives: "rural Appalachia lags behind rural America; urban Appalachia lags behind urban America; and metropolitan Appalachia lags behind metropolitan America" (PARC 1964, p. xviii). Even the region's relatively prosperous cities, noted the Commission's report, "reflect hard core Appalachia's underdevelopment." The report showed that the region had low income levels, high unemployment rates, low education levels, high rates of poverty, and less population and employment growth than the nation.

At the root of the region's problems lay limited employment opportunities and spatial isolation. The Commission made this point by story and by statistics:

> *Graphs and tables can hardly relate the acutely personal story of a child in a remote valley, his horizon of opportunity limited to the enclosing hills; nor the despair of his father, who, idled by forces beyond his control and seeing no prospect of future employment, must live month in and month out with the vision of that child repeating his own history.* (PARC 1964, p.1)

The industrial composition of the region's economy and recent changes in key industries had exasperated the situation. Between 1950 and 1960, mining and agriculture had released half their workers, a decline of 641,000 jobs. Employment in manufacturing, construction, and services had increased, but total employment had decreased by 1.5 percent, while the nation had grown 15 percent (PARC 1964, p. 4). The President's Commission saw changes in the Appalachian economy as the key to the region's development and its people's well-being:

> *The major objective of this regional development process is clear: Appalachia must attain an employment base which can sustain its people at a level of dignity and prosperity comparable to the affluent nation of which it is part. The conversion and processing of its raw materials should be done locally to the fullest extent possible. New industries, dependent not only on the resources of the region but on the strategic location and potential market which Appalachia represents, must be located in the region. The magnificent recreational resources must be developed with coordinated intensity if the employment potential is to be realized. Agricultural diversification should be accelerated, and mining and timber employment and income expanded.* (PARC 1964, p. 26)

This report returns to the Appalachian economy thirty-some years later. The Commission had pointed out that "private firms and individual enterprises will create the jobs needed" (p. 28), but that public investments in modern roads, airports, health facilities, education, and other social overhead were necessary before economic development could occur. In the meantime 2,100 miles of highways have been completed to reduce the isolation, and $14 billion dollars have been

spent to help the region "achieve a diversified economic base and a competitive, self-sustaining economy" (ARC 1993). This study focuses on three issues:

- Does the industrial composition of Appalachia still retard its growth?
- Does Appalachian employment growth still lag behind the nation, does it follow the national business cycle, or is it dominated by other factors?
- Is Appalachia attracting good jobs, that is, high-paying jobs in growing industries?

Recognizing the diverse circumstances within Appalachia, the analysis approaches each question on either the county level or the local development district level. Appalachia has 399 counties and five independent cities, which are combined into 69 local development districts, as well as three major subregions, Northern, Central, and Southern.

INDUSTRIAL COMPOSITION

Changes in mining and agriculture profoundly affected the region in the 1950s. Those two sectors accounted for one in four Appalachian jobs in 1950 but only one in ten by 1960 (PARC 1964, p. 78). Impressive as these numbers are, they conceal their effects on individual towns and counties and their residents. In those 10 years, the population of McDowell county, West Virginia, for example, declined from 99,000 to 71,000. The 1960s brought no respite, and the population of that coal mining county was only 50,000 by 1970. Half its population was gone in just one generation.

Appalachia was hit hard again by the economic restructuring that occurred internationally between 1979 and 1984. Figure 1 below shows employment change in the United States from

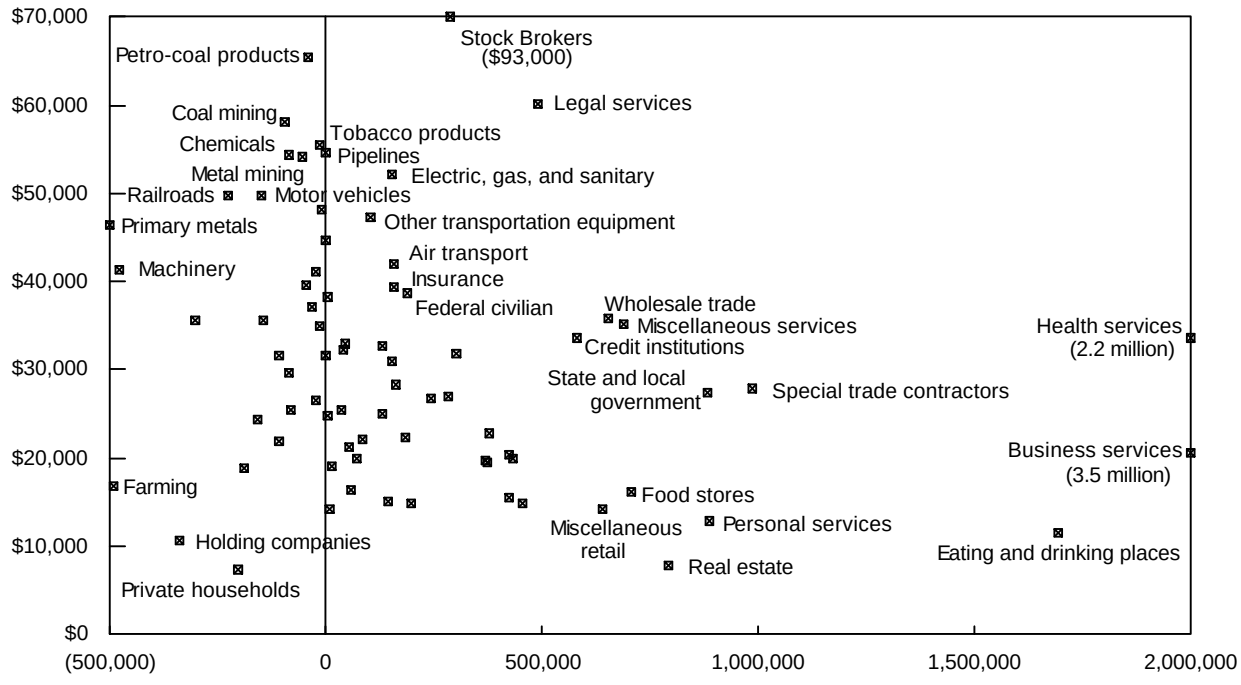


Figure 1: U.S. Employment Change, 1979-87, versus 1992 Average Earnings

1979 through 1987 in order to include the net results of the so-called national recession and the subsequent recovery. The vertical axis is the average 1992 earnings per employee, and the horizontal axis is the change in the number of jobs between 1979 and 1987. Thus, for example, primary metals manufacturing with average earnings of about $45,000 lost 500,000 jobs, and legal services with average earnings of about $60,000 gained 500,000 jobs.

There are two main points to note in the figure. First, many high paying jobs did not come back during the recovery. Thus, what happened in 1979-84 was a major change in the structure of American industry, not a mere recession. Second, many of the lost jobs are in industries synonymous with Appalachia, including coal mining, chemicals, petro-coal products, railroads, primary metals, and machinery. A similar figure describing Appalachia would show more severe losses of jobs in the higher paying industries.

This section uses more recent data to determine whether the region's industrial composition continues to retard its growth. It analyzes county earnings on the two-digit industry level from 1988 to 1994. Earnings have an advantage over employment because the Bureau of Economic Analysis, U.S. Department of Commerce, provides earnings on the two-digit level, e.g., coal mining or primary metal production, but employment only on the grosser one-digit level, e.g., mining or manufacturing. A computer program written by a research team at the Regional Research Institute overcomes the data suppression problem to the extent possible in order to use the most industrial detail possible for each county. Choice of the period 1988 through 1994 reflects the fact that a new industrial classification code went into effect in 1988, making earlier data not fully comparable for certain industries, and that 1994 is the most recent year available.

A county's industrial composition is considered favorable for growth if the county has relatively many jobs in fast growing industries. Growth rates of earnings varied greatly among industries between 1988 and 1994. Amusement and recreation services grew 105 percent and health services grew 68 percent, while coal mining grew only 2 percent and lumber and wood products 25 percent. Hence, a county dominated by coal mining and lumbering probably would have grown slower than one dominated by health services or amusement and recreation.

More generally, counties expected to grow less fast than the nation in employment were those with relatively many jobs, for example, in coal mining, railroad transportation, stone, clay, and glass products, primary metals, machinery and electric equipment, apparel and textile mill products, and tobacco products. Those industries nationally grew from 2 to 20 percent in earnings, compared to the overall earnings growth rate of 37 percent. At the other extreme and expected to grow faster than the nation were counties with relatively many jobs, for example, in amusement and recreation services, social services, health services, motion pictures, holding and other investment companies, and agricultural services. Those industries grew from 60 to 105 percent. Likewise, counties with concentrations of employment in educational services, engineering and management services, security and commodity brokers, insurance carriers, and state and local government had a favorable industrial composition because those industries grew 44 to 54 percent.

Industrial composition remains a disadvantage for most Appalachian counties. Figure 2 shows in black those 46 Appalachian counties whose industrial composition in 1988 was favorable for growth. Considering only the nature of their economic bases, those counties would have grown faster than the nation from 1988 to 1994. In only 9 cases did this favorable industrial composition convey an advantage of 3 percent or more in total earnings. In contrast, their disadvantageous industrial compositions amounted to 5 percent or more of total earnings for 118 Appalachian counties.

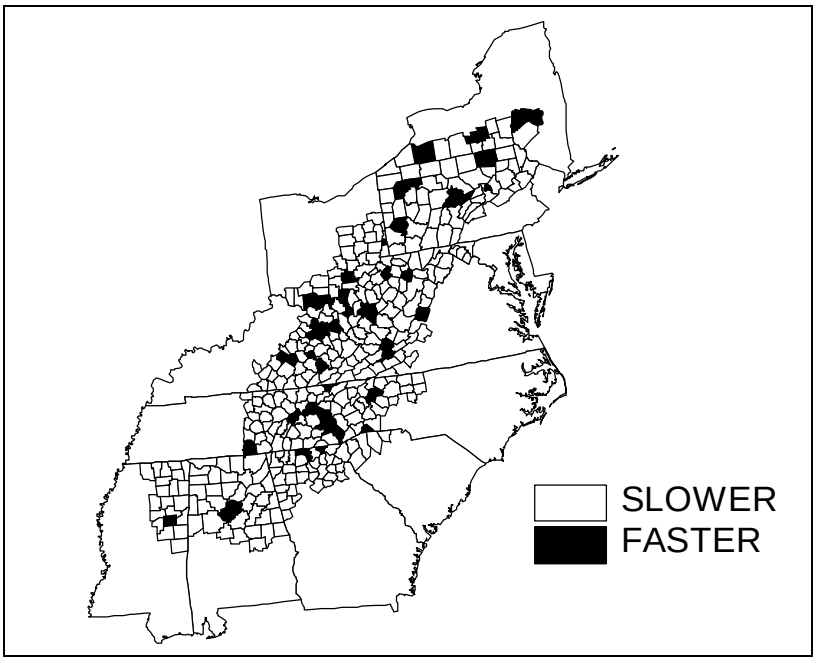


Figure 2: The Role of Industrial Composition in Earnings Growth, 1988-94

Yet industrial composition alone does not determine county growth rates. Counties with an unfavorable industrial mix grow faster than the nation when the industries there grow faster than in the rest of the nation. Similarly, counties with a favorable industrial composition lag behind the nation when their industries are moving or expanding elsewhere. Various regional or local factors can cause a county to grow faster or slower than its industrial composition predicts. Without having to specify those local factors, their effects can be measured as the difference between what actually occurs and what is predicted by the industrial composition.

Much of Appalachia did better than its industrial composition predicts. All the 269 shaded counties in Figure 3 did so. Thus, a negative industrial composition and positive local factors shaped most Appalachian growth between 1988 and 1994. The net result of that tension is shown in Figure 4. Local factors overcame the effects of industrial composition in much of Appalachia, and the 198 shaded counties grew faster than the nation. Readily apparent in Figure 4 is growth in Central Appalachia, long the worst off of the Appalachian subregions.

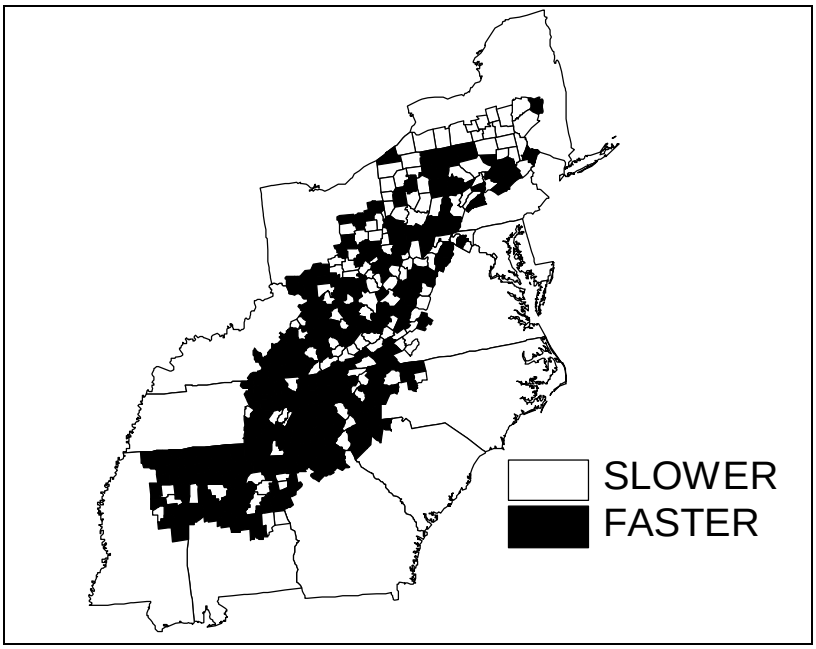


Figure 3: Earnings Growth Standardizing for Industrial Composition, 1988-94

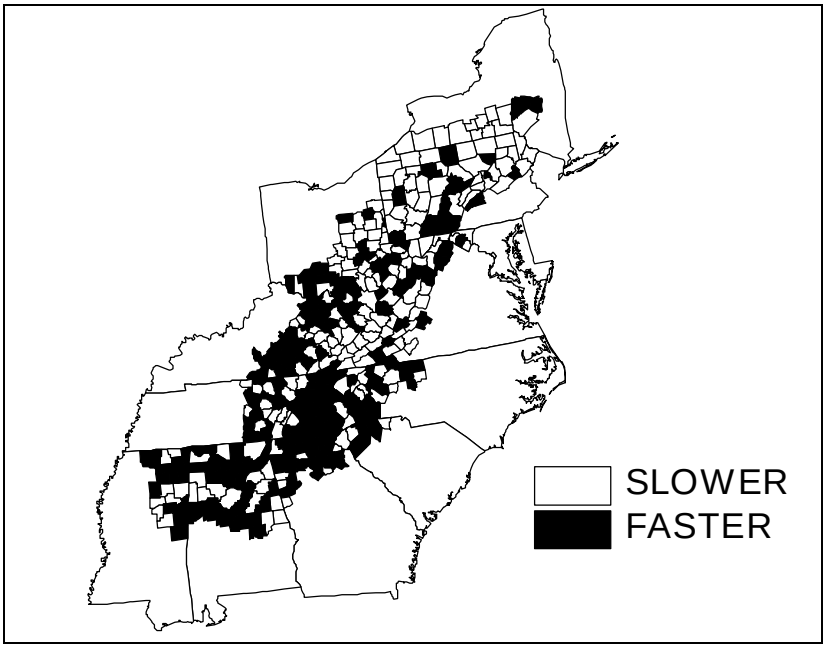


Figure 4: County Earnings Growth Relative to the Nation, 1988-94

The results presented here include some surprises. First, the very premise motivating the analysis was wrong because much of Appalachia did not lag the nation over the period 1988-94. In fact, Appalachia exceeded the nation in earnings growth, 39 percent to 37 percent. Second, industrial composition continued to retard the growth of most Appalachian counties. Third, most counties overcame the handicap of their industrial composition and grew faster than their industrial composition would have predicted. Industrial composition, hence, is not the primary determinant of Appalachian fortunes, as it arguably was in the 1950s and 1960s.

GROWTH LAGS AND THE BUSINESS CYCLE

The previous section demonstrated that much of Appalachia is growing faster than the nation. Yet, it is premature to conclude that Appalachia is no longer a lagging region. The analysis covered only one six-year period, albeit the most recent, and one indicator, earnings. This section goes further. It examines Appalachian growth for a longer period, 1969-94 (the full extent of the Bureau of Economic Analysis data series), and focuses on employment. It explores three related questions: Does Appalachian employment growth still lag behind the nation, does it follow the national business cycle, or is it dominated by other factors?

The Appalachian Lag

Times have changed. The 1964 report contrasted American growth and Appalachian stagnation. Recall that the number of jobs in Appalachia declined 1.5 percent between 1950 and 1960, while the rest of the nation grew 15 percent. The statistics for 1969 to 1994 also reveal an Appalachian lag, but not stagnation or decline. Appalachian employment increased 46 percent compared to 60 percent for the rest of the nation. In the most recent period, 1988-94, Appalachia even grew faster than the rest of the nation, 10.0 percent to 7.7 percent.

Looking within Appalachia reveals that Southern and Central Appalachia have grown faster than the nation over both the past quarter century, as well as the last six years. Only Northern Appalachia lagged in employment growth. The growth rates below are ranked by the longer time period. The Northern lag probably reflects the fortunes of the industrial Northeast as a whole and is not a uniquely Appalachian phenomenon.

	1969-94	1988-94
SOUTHERN APPALACHIA (metro)	83.5	13.4
CENTRAL APPALACHIA (metro)	68.8	14.1
SOUTHERN APPALACHIA (nonmetro)	61.7	12.1
United States (metro)	62.8	6.8
United States	**60.0**	**7.5**
CENTRAL APPALACHIA (nonmetro)	58.5	10.6
United States (nonmetro)	47.3	11.3
Appalachia (nonmetro)	**46.8**	**9.6**
Appalachia	**46.4**	**10.0**
Appalachia (metro)	**46.1**	**10.2**
NORTHERN APPALACHIA (nonmetro)	30.3	6.8
NORTHERN APPALACHIA (metro)	20.0	6.8

Examining Appalachia by state also shows much of the region no longer lagging. The Appalachian portions of five states grew faster than the nation during the quarter century, but ten states did so more recently. Only the Appalachian portions of New York, Maryland, and Pennsylvania grew more slowly than the rest of the nation between 1988 and 1994.

	1969-94	1988-94
GEORGIA	185.0	25.8
SOUTH CAROLINA	79.2	10.0
NORTH CAROLINA	70.9	10.6
TENNESSEE	67.7	12.7
KENTUCKY	66.5	11.5
United States	**60.0**	**7.5**
ALABAMA	57.4	9.7
MISSISSIPPI	49.3	12.5
Appalachia	**46.4**	**10.0**
VIRGINIA	44.4	7.7
OHIO	37.4	10.9
MARYLAND	33.7	5.4
WEST VIRGINIA	27.3	10.5
NEW YORK	23.2	0.0
PENNSYLVANIA	19.4	6.5

Because Appalachia is so diverse, a county-level examination of the growth rates is worthwhile. Figure 5 shows that 157 Appalachian counties grew faster than the nation in employment from 1969 to 1994, but 123 counties grew less than half as fast as the nation. With some exceptions, Appalachia divides into a southern portion that grew faster than the nation and a northern portion that did not.

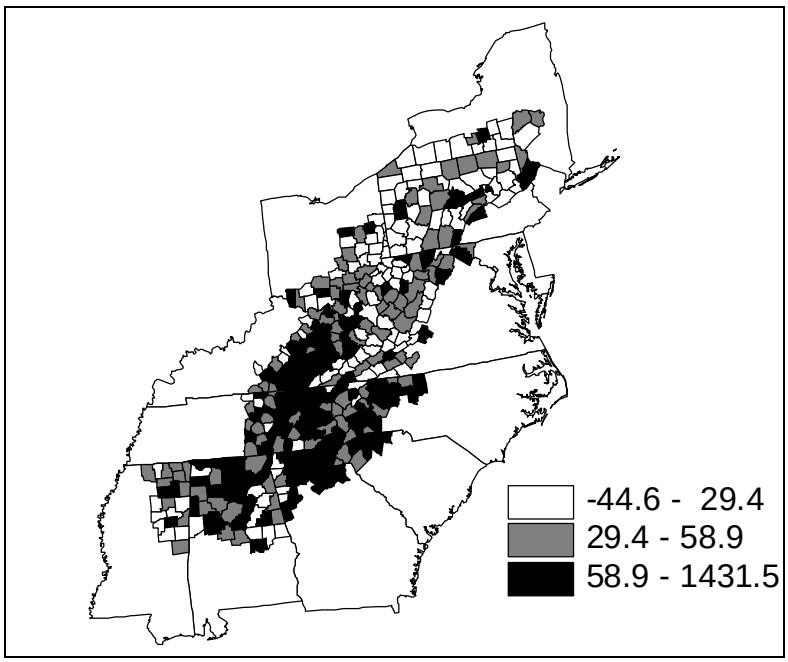


Figure 5: County Employment Growth Rates, 1969-94

The north-south divide is far less pronounced over the most recent period. Much of Appalachia did better than the nation. Figure 6 shows 239 Appalachian counties growing faster than the nation, with only 89 counties growing at half the national rate or less. Those lagging counties are scattered throughout the region.

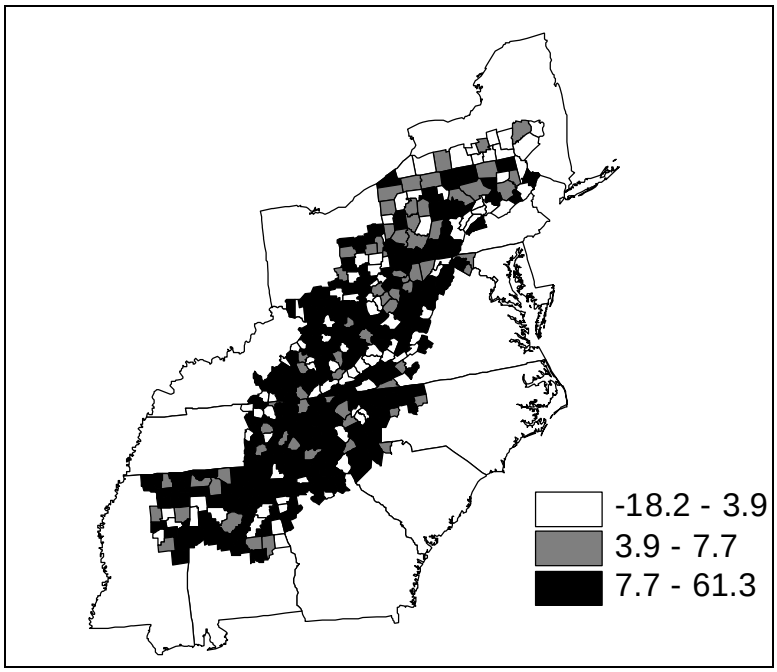
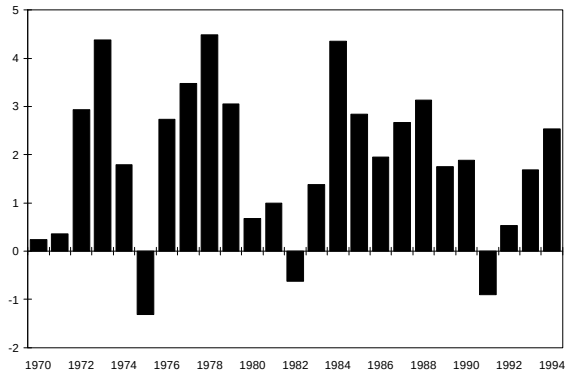


FIGURE 6: County Employment Growth Rates, 1988-94

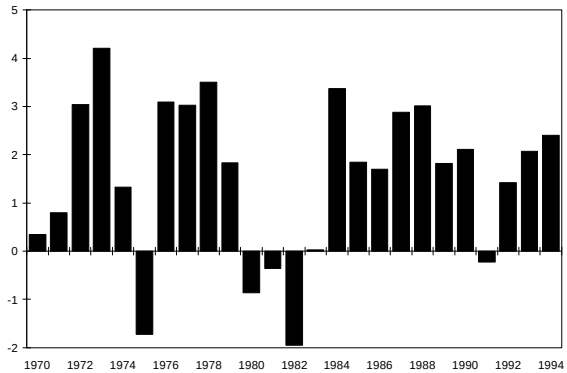
The Business Cycle

This analysis delves more closely into the pace and timing of Appalachian growth. Emphasis is on the annual pattern of employment change since 1969, using "skyline" diagrams that show each year's employment growth rate from 1969-70 through 1992-93. Of primary interest is the degree to which the Appalachian economy adheres closely to the national profile. Note that the skylines are not all drawn to the same scale. Each is magnified to the extent possible because the focus here is on the timing and stability of growth, not on its magnitude.

United States



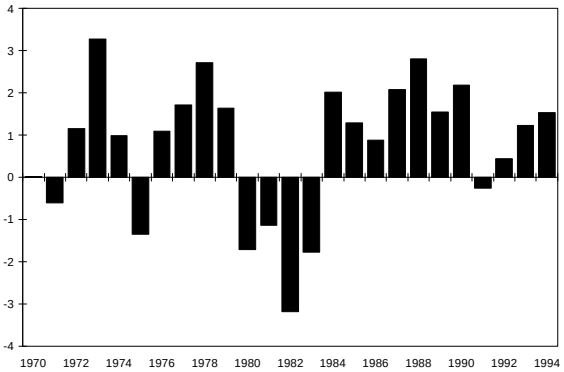
Appalachia



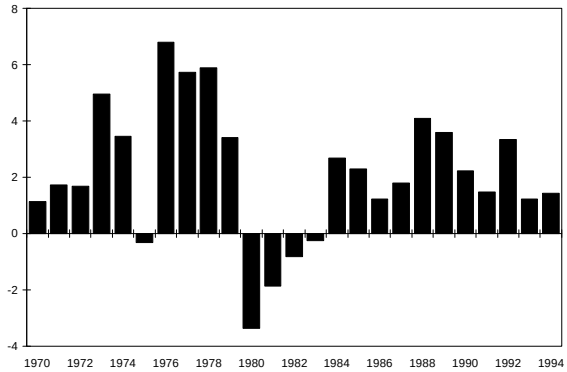
When comparing the annual employment growth rates of the United States and Appalachia, three points are noteworthy: (1) The nation grew faster as reflected by its higher "skyscrapers," (2) Appalachia suffered far more severely from the economic restructuring of 1979-83; its "recession" was deeper and longer, and (3) Appalachia fared better than the nation in the most recent slowdown of the national economy.

Variations within Appalachia are noteworthy, again. Northern Appalachia was hit hard by the 1979-83 restructuring. Southern Appalachia largely followed the national profile. Central Appalachia showed strength between 1975 and 1979 when oil prices increased demand for coal. It suffered from the 1979-83 restructuring but was the only subregion whose employment grew in both metropolitan and nonmetropolitan areas through the 1990-92 national recession.

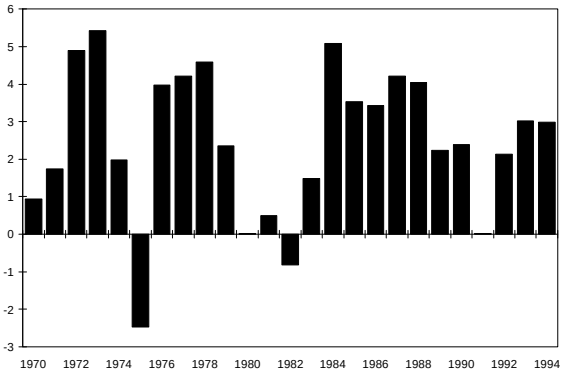
Northern Appalachia, Metropolitan



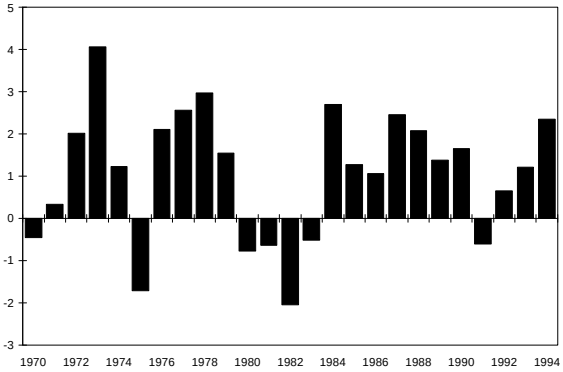
Central Appalachia, Metropolitan



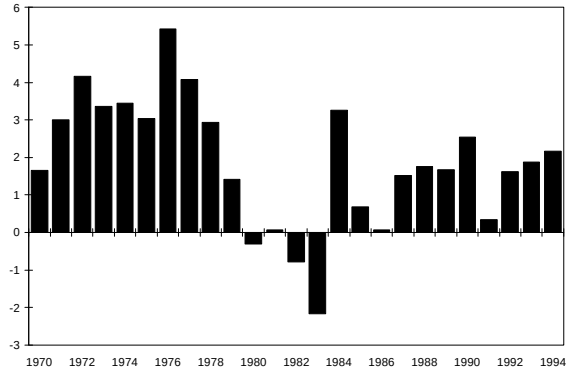
Southern Appalachia, Metropolitan



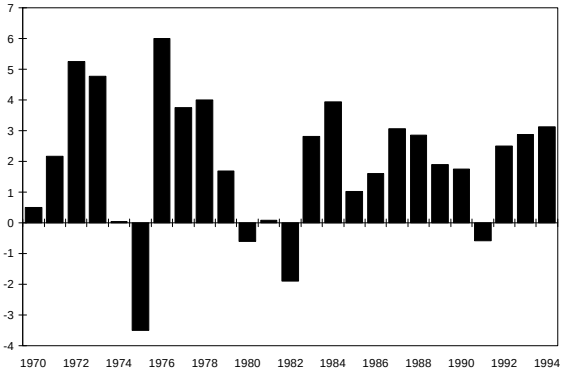
Northern Appalachia, Nonmetropolitan



Central Appalachia, Nonmetropolitan

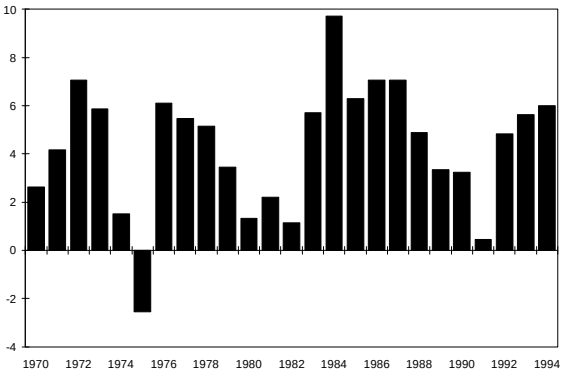


Southern Appalachia, Nonmetropolitan

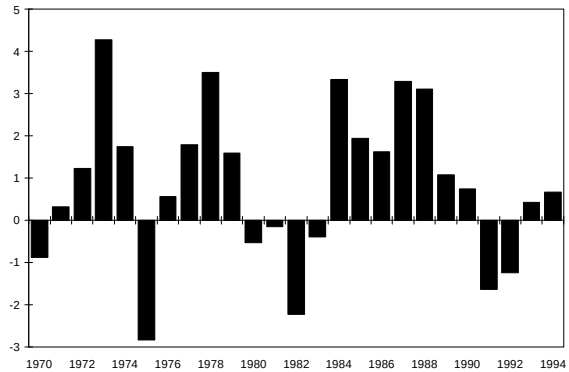


The diversity of Appalachian employment growth experiences and their frequent departures from the national pattern become even more evident when examining the skylines of the two fastest and two slowest growing Appalachian portions of states. Georgia had one year of decline, South Carolina three, and New York and Pennsylvania eight each.

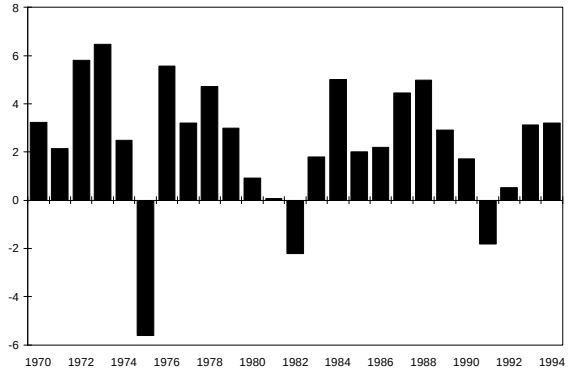
Georgia



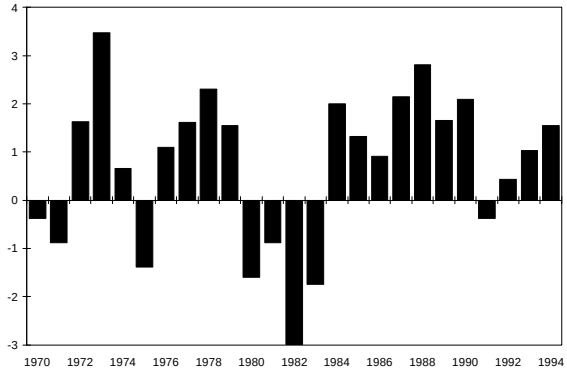
New York



South Carolina

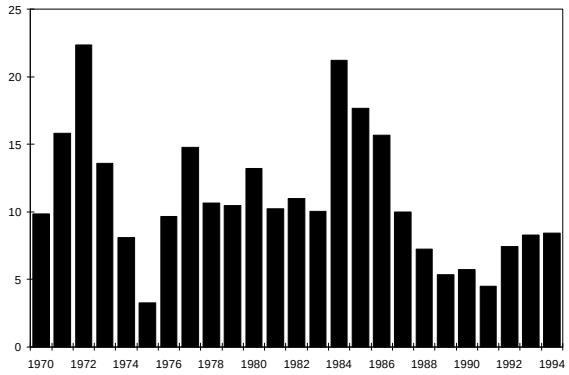


Pennsylvania

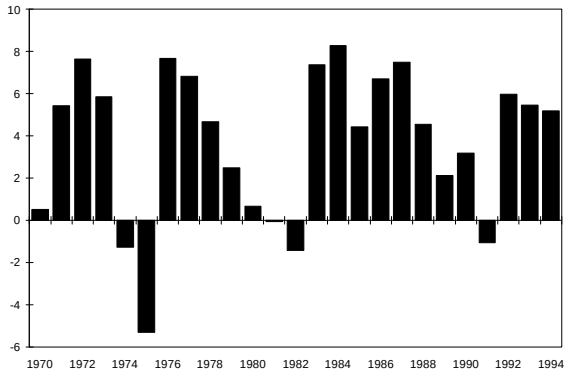


The employment skylines of the 69 local development districts show considerable variety, too, even within the same state. Appendix A includes the skylines of each district and its state, arranged alphabetically by state. Four skylines suffice to make the point that local factors within Appalachia produce great departures from the national pattern. The local development district with the fastest employment growth consists of three counties in the Atlanta area. It grew 1,224 percent in jobs between 1969 and 1994 and 47 percent between 1988 and 1993. Next came the district centered on Dalton, Georgia, with 147 percent and 23 percent growth.

Georgia 2D (Atlanta)



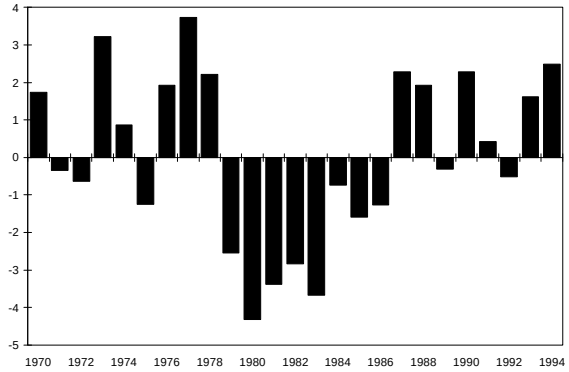
Georgia 2F (Dalton)



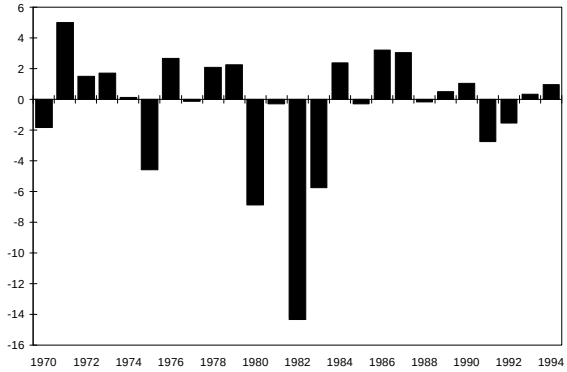
The national business cycle transforms the Atlanta skyline only by accelerating or slowing the rate of employment growth. The height of the skyscrapers is primarily the result of suburbanization and outward growth of the Atlanta metropolitan area. Dalton is a case of Southern manufacturing diversification and growth, but it has not been immune from employment declines. Its skyline shows sensitivity to national recessions.

At the other extreme are the local development district centered on Wheeling, West Virginia, where employment grew 1 percent over 1969-94 and 6 percent over 1988-94, and the district immediately to its north, including Weirton, where employment declined 13 percent over the quarter-century and 2 percent over the most recent period.

West Virginia 13J (Wheeling)



West Virginia 13K (Weirton)



Wheeling and Weirton's skylines are the first reminders of that 1964 Appalachian characterization of stagnation and decline. Yet they are the only districts in Appalachia with less than 12 percent growth over 1969-94. None but Weirton had fewer jobs in 1994 than in 1969. Both districts suffered major dislocations in the 1980s similar to those that had afflicted Appalachia in the 1950s.

The transformation of America's steel industry and related heavy manufacturing underlie the Wheeling and Weirton profiles. Weirton lost 20 percent of its jobs in but three years, 1979-82. The adjacent Wheeling district lost 10 percent of its jobs in the same three years. Before they started to grow again, Weirton had lost one of four jobs and Wheeling one of six. They are modern examples of the kind of major industrial transformation that has occurred in Appalachia's past. Their skylines show how such "busts" can dominate national business cycles and determine local fortunes.

GOOD JOBS

With all but one local development district gaining jobs over the past quarter century, an obvious question is what kinds of jobs are they? Figure 1 of this report adds poignancy to that question because it shows declines in high paying jobs that have been and are an important part of the Appalachian economic base. It does not show commensurate gains in other high paying jobs. With trade and service jobs to a large degree replacing mining and manufacturing jobs, a common Appalachian image is of formerly well paid coal miners and factory workers being offered only minimum wage jobs in the fast food industry. Yes, there are new jobs, point out the skeptics, but are they good jobs that pay enough to raise families, buy homes, and provide health care?

This section focuses on good jobs, defined here as jobs in industries that are growing and pay above average wages. Jobs are defined by industry instead of by occupation because better statistics are available by industry. The emphasis on growing industries is to avoid counting jobs that pay well but are insecure. For instance, average annual earnings in underground bituminous coal mining was $42,129 in 1992, well above the national average earnings of $23,239. That industry, however, lost over 26,000 jobs, or 31 percent, between 1988 and 1992. By 1992 there were only 60,000 such jobs left. They are good jobs from the standpoint of pay, but not from the standpoint of personal security or regional economic development.

This analysis departs from Figure 1 in two ways: it examines the economy in greater industrial detail and it uses a different data source in order to gain that greater detail. Therefore, this analysis will reveal growing, well paying industries that are not evident in Figure 1 (for instance, some segments of the business service industries that pay very well), and the earnings numbers will be different because the two data sources use different definitions and time periods.

This section has three main parts. The first identifies the good jobs, the second determines the extent to which they exist in Appalachia, and the third examines Appalachia's shares of those jobs relative to the nation. The primary data source is *County Business Patterns*, which is based on Social Security records and published annually by the Bureau of the Census, U.S. Department of Commerce. It includes all private sector, nonfarm jobs covered by Social Security. The employment statistics are for the pay period including March 12. Average earnings is defined here as total wages in the first quarter of 1992 divided by employment in the mid-March pay period. Since employment levels vary over a year, sometimes severely, these average earnings statistics are estimates. The national data used to define good jobs are for 1988 and 1992, the former being the first year using the current industrial classification code and the latter being the most recent year available. The analysis of Appalachia uses the 1992 data.

Employment numbers reported here by industry for counties, local development districts, and the region are frequently estimates because of the substantial amount of data suppression necessary to protect businesses' confidentiality in the *County Business Patterns* data. *CleanCBP* software developed by the Regional Research Institute makes estimates of the suppressed data. The algorithm utilizes data on the distributions of establishments into categories by numbers of employees, on unsupressed employment data for other industries, and on the range within which the suppressed data lie, as well as other information contained in the data files. A good compromise between gaining industrial detail and avoiding excessive data suppression is to define industries on the three-digit level of the standard industrial classification (SIC) code. An example illustrates the SIC code and this choice of level. Engineering and architectural services is a three-digit industry (SIC 8710), which is composed of three four-digit industries, namely, engineering services (8711), architectural services (8712), and surveying services (8713); in turn, engineering and architectural services is part of a larger two-digit industry engineering and management services (8700), which together with 13 other two-digit industries forms the one-digit sector, services.

Which are the good jobs?

Fifty-four industries meet the dual criteria of (1) paying more than the $23,239 average wages of all private, nonfarm employment nationally in 1992 and (2) adding at least 5,000 jobs nationally between 1988 and 1992. They are a diverse set of industries, including manufacturing, services, and several other sectors. In terms of job growth, the leaders are hospitals (1.5 million jobs), offices and clinics of medical doctors (300,000), computer and data processing services (150,000), commercial banks (120,000), management and public relations (120,000), legal services (100,000), and telephone communication (100,000). In terms of total number of jobs, the leaders in 1992 are hospitals (4.7 million), commercial banks (1.6 million), doctor's offices

and clinics (1.5 million), trucking and courier services, except air (1.4 million), legal services (950,000), telephone communication (920,000), engineering and architectural services (850,000), and computer and data processing services (830,000). In terms of average earnings, the leaders are security and commodity services ($64,000), investment offices ($60,000), and foreign banks ($59,000).

These 54 growing, well paying industries provided over 25 million jobs nationally in 1992. They grew 16 percent between 1988 and 1992, adding 3.5 million jobs. They form ten broad groups, which, sorted by absolute job growth, are:

Group	Growth	% Growth	1992 Jobs
Health Services	1,832,085	39.6	6,462,164
Other Services	415,221	17.8	2,753,797
Engineering and Management Services	316,290	13.7	2,618,281
Finance and Investment	240,480	12.0	2,240,927
Insurance	220,999	17.8	1,461,576
Communication and Utilities	212,369	12.2	1,959,737
Wholesale Trade	129,407	4.1	3,268,989
Manufacturing	102,452	6.2	1,764,024
Transportation	58,779	3.0	1,999,464
Retail Trade	10,750	1.3	821,671
Total	3,538,832	16.2	25,350,630

The complete list of the 54 industries is in the table to follow. The industries are shown in the ten groups and are once again sorted by job growth within each group. N.E.C. is an SIC code abbreviation for not elsewhere classified.

		1988-92 Change			Average
SIC	Industry	Growth	%	1992 Jobs	Earnings
Manufacturing					
3840	Medical instruments and supplies	37,073	17.2	252,625	$31,699
2830	Drugs	19,459	11.2	193,899	$39,445
2810	Industrial inorganic chemicals	12,869	13.9	105,680	$38,875
2730	Books	9,973	8.6	125,329	$31,378
2860	Industrial organic chemicals	8,776	7.1	131,905	$43,897
3080	Miscellaneous plastics products, n.e.c.	8,321	1.3	637,420	$23,389
3590	Industrial machinery, n.e.c.	5,981	1.9	317,166	$26,451
Transportation					
4210	Trucking and courier services, except air	29,046	2.1	1,423,209	$23,656
4510	Air transportation, scheduled	22,242	4.2	556,013	$35,815
4520	Air transportation, nonscheduled	7,491	58.7	20,242	$28,323
Communication and Utilities					
4810	Telephone communication	96,543	11.7	920,795	$41,313
4910	Electric services	37,944	8.7	474,062	$44,518
4950	Sanitary services	27,412	30.7	116,755	$29,357
4840	Cable and other pay TV services	23,073	22.1	127,687	$27,707
4920	Gas production and distribution	21,482	15.9	156,631	$40,381
4930	Combination utility services	5,915	3.7	163,807	$48,437
Wholesale Trade					
5040	Professional and commercial equipment	23,405	3.3	727,186	$38,012
5140	Groceries and related products	22,159	2.8	799,977	$25,573

5120	Drugs, proprietaries, and sundries	21,742	17.2	148,092	$35,340
5090	Miscellaneous durable goods	17,760	6.3	300,795	$25,098
5130	Apparel, piece goods, and notions	15,687	8.8	194,355	$30,130
5080	Machinery, equipment, and supplies	14,920	2.1	729,517	$29,394
5110	Paper and paper products	7,361	3.3	228,697	$26,689
5160	Chemicals and allied products	6,373	4.8	140,370	$36,502
Retail Trade					
599\	Administrative and auxiliary (retail trade)	10,750	1.3	821,671	$30,256
Finance and Investment					
6020	Commercial banks	121,773	8.4	1,576,334	$28,120
6160	Mortgage bankers and brokers	27,406	17.9	180,747	$36,176
6280	Security and commodity services	22,242	32.0	91,846	$63,792
6710	Holding offices	21,135	18.1	137,750	$48,419
6150	Business credit institutions	13,054	15.1	99,276	$42,292
6090	Functions closely related to banking	13,021	34.4	50,898	$35,393
6080	Foreign bank and branches and agencies	10,485	82.2	23,248	$58,912
6730	Trusts	6,330	10.8	64,777	$24,190
6720	Investment offices	5,034	45.7	16,051	$59,997
Insurance					
6310	Life insurance	87,554	16.3	625,841	$32,621
6330	Fire, marine, and casualty insurance	66,162	12.8	584,236	$35,624
6320	Medical service and health insurance	60,321	34.7	234,118	$29,457
6350	Surety insurance	6,962	66.8	17,381	$40,801
Health Services					
8060	Hospitals	1,495,190	46.5	4,707,703	$26,644
8010	Offices and clinics of medical doctors	293,566	23.6	1,535,400	$38,310
8070	Medical and dental laboratories	36,057	25.9	175,336	$25,190
8030	Offices of osteopathic physicians	7,272	19.9	43,725	$27,526
Engineering and Management Services					
8740	Management and public relations	117,372	17.8	776,464	$31,891
8720	Accounting, auditing, and bookkeeping	75,689	15.2	573,546	$25,996
8710	Engineering and architectural services	61,730	7.9	847,176	$37,418
8730	Research and testing services	61,499	17.1	421,095	$32,419
Other Services					
7370	Computer and data processing services	154,829	22.8	833,706	$38,520
8100	Legal services	103,401	12.2	951,908	$36,195
7810	Motion picture production and services	60,031	37.8	218,942	$28,266
899\	Administrative and auxiliary for services	53,080	16.0	384,485	$38,358
7940	Commercial sports	18,656	26.4	89,378	$34,822
8610	Business associations	9,381	10.2	101,504	$28,969
7620	Electrical repair shops	8,184	7.6	115,425	$23,686
8620	Professional organizations	7,659	15.1	58,449	$28,332

Are the good jobs found in Appalachia?

Integrating the Appalachian economy with the national one so as to introduce ”Appalachia and its people into fully active membership in the American society” (PARC 1964, p. 65) has been a central goal of the Appalachian Regional Commission since its beginning. One sign of that integration is that every one of the 54 growing, high wage industries is present in Appalachia. The Appalachian portions of North Carolina and Pennsylvania themselves each have all 54 industries, and Appalachian Tennessee and West Virginia each have 53 of them. All but three states have 50 or more of these industries, and those three, Maryland, Virginia, and Mississippi,

have 45 or 46 of them. Those last three states have the smallest number of total jobs in Appalachia, too, so the small size of their Appalachian portions may explain more than any other factor why they lack eight or nine of the industries. In short, Appalachia is sharing in the growth of these industries. In that sense, it is no longer a region apart. Now the questions become how many jobs and where.

Appalachia has 1.6 million of these good jobs in almost 90,000 business establishments. Although the average is 18 jobs per establishment, many establishments are far larger. Appalachia has 882 establishments in these 54 industries that employ more than 250 people each, including 167 that employ more than 1,000. The states range from having 18,000 of these good jobs in 1,000 establishments (Maryland) to 530,000 jobs in 26,000 establishments (Pennsylvania). The numbers for each state follow:

State	No.	Good Jobs	Units	250-499	500-999	>1000
Appalachia	54	1,605,222	88,841	464	251	167
Alabama	52	226,975	11,523	57	32	30
Georgia	52	102,757	7,006	19	13	8
Kentucky	50	46,840	3,934	16	9	2
Maryland	45	18,311	1,009	5	1	3
Mississippi	46	25,976	1,950	9	1	1
New York	51	65,377	4,046	23	13	7
North Carolina	54	92,341	5,366	28	11	9
Ohio	50	70,499	4,527	25	17	5
Pennsylvania	54	530,507	25,669	173	88	61
South Carolina	52	83,183	4,165	20	15	8
Tennessee	53	184,959	9,616	50	21	19
Virginia	45	24,777	2,129	11	4	0
West Virginia	53	132,720	7,901	28	26	14

Every local development district has some of these industries, but the number varies considerably. One district has all 54 industries present, 9E in Pennsylvania, the Pittsburgh region. Two districts have 53 industries, 9A in Pennsylvania, the Erie region, and 11B in Tennessee, the Knoxville region. Others with more than 50 are the regions of Birmingham, Alabama (1E), Greenville, South Carolina (10A), and Chattanooga, Tennessee (11E), each with 52, and Atlanta, Georgia, (2D) and Asheville, North Carolina (7B), each with 51.

At the other extreme are more rural districts: 5D in Mississippi with 7 industries, 3J in Kentucky with 11, and 3A in Kentucky and 12F in Virginia with 19 each. Yet, only six local development districts have fewer than 30 of the 54 industries. Figure 7 shows the number of industries present in each district. The one black area in mid-Appalachia is the Charleston, West Virginia region, again confirming the predictable outcome that large numbers of these industries are more likely to be found in the larger, more diverse economies of metropolitan areas.

Six growing, high-wage industries are present in every local development district, namely, commercial banks, doctors' offices and clinics, trucking and courier services, legal services, telephone communication, and electric services — not a surprising finding. Others are present in fewer than half the districts, for example, foreign banks (2 districts), investment offices (16), surety insurance (20), drugs manufacturing (25), nonscheduled air transportation (29), and motion

picture production (34). Most are not so rare, however. Twenty-nine are found in more than 60 districts, among them, hospitals, industrial machinery manufacturing, accounting, auditing, and bookkeeping, engineering and architectural services, management and public relations, computer data processing services, and several wholesale industries, which exist in 64 districts or more.

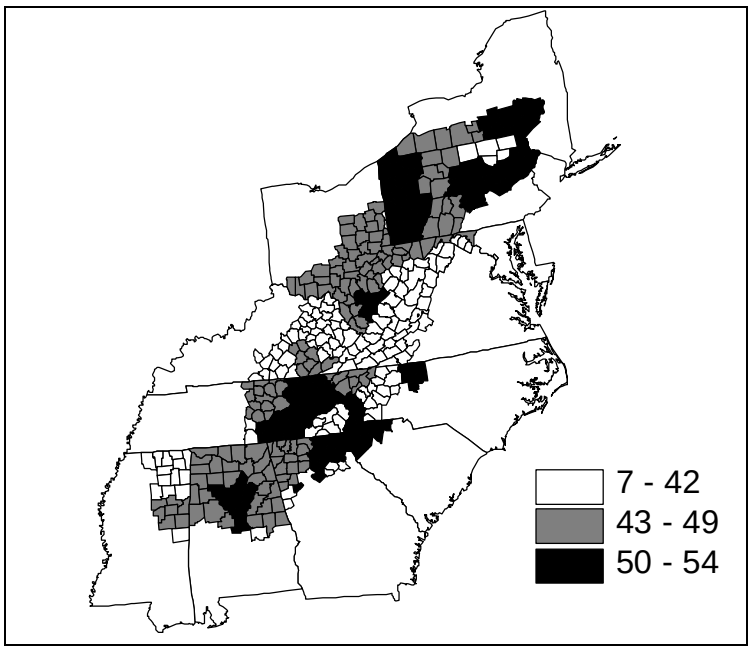


Figure 7: Number of Growing, High-Wage Industries Present by District, 1992

Among the more limited industries geographically yet employing more than 10,000 people each are gas production and distribution (57 districts), medical instrument and supplies manufacturing (48), medical service and health insurance (45), scheduled air transportation (42), and industrial chemicals manufacturing (38). Yet, all but eight of the 54 industries are present in more than half the districts. More information for each industry and local development district, including the number of jobs and the size distribution of establishments, is in Appendix B.

Does Appalachia have its share of the good jobs?

The presence of the growing, high-wage industries in Appalachia is encouraging testimony that the hoped for diversification of the Appalachian economic base and its more favorable integration into the national economy is occurring. The existence of 1.6 million jobs in these industries is important in itself and an indicator of the continuing modernization of the Appalachian economy. The analysis thus far, however, does not reveal whether Appalachia is lagging the rest of the nation in terms of the number of jobs in these industries.

Several measures will be used to determine whether Appalachia has its share of the good jobs. One obvious indicator, the growth rate of these jobs, will not be used for lack of detailed 1988 county employment data to match the 1992 data created for this study. (Such an analysis is possible, although fraught with difficulty because of the data suppression problems and reclassification of individual firms among SIC categories.) The indicators used here are based on concentrations of the good jobs, the results of growth rates, if not the rates themselves. They answer two specific questions: Are the good jobs as large a part of the Appalachian economy as they are of the national economy? Are the local development districts specialized in any of these industries, meaning do they export the goods and services of those industries beyond their own borders to other parts of Appalachia, the nation, or the world? Note that exports in this context refers to exports from a local development district, which includes exports abroad but is not limited to foreign exports. With the broader use of the term, goods and services produced in the Birmingham, Alabama, region (1E) and consumed elsewhere, whether Germany, Pennsylvania, or a neighboring local development district are exports from district 1E.

In short, under the criteria used here, a place has its share or more of the good jobs if (1) the good jobs in total account for at least the same proportion of the place's economy as they do of the nation's, and (2) the place has specialized so successfully in some of the industries that it is exporting goods and services to other places.

Good Jobs as a Proportion of the Economy. Appalachia has 1.6 million jobs in the 54 industries, and the nation has 25.4 million, so Appalachia almost has its share of these good jobs. They are 16 percent of the Appalachian economy, almost one of every six jobs in Appalachia, but they are 18 percent of the national economy. Seen in another way, Appalachia has 6 percent of the nation's good jobs but 7 percent of its total jobs.

Appalachia is still a lagging region in a specific sense. It has proportionately fewer good jobs (again given the very specific definition of good job adopted here). It does not have its share of these jobs. It has 6/7 of its share, so there is a gap of 14 percent in acquiring good jobs. Note a certain roughness in using employment shares as a measure. Use of the 7 percent standard because Appalachia has 7 percent of the nation's total jobs implies that Appalachia has its share of total employment. If Appalachia has a deficit in total jobs, the estimates here understate its deficit in good jobs.

Appalachia has more than its share of jobs in 13 of the growing, high-wage industries — using as its share 7 percent. This group reflects primarily the continued ability of Appalachia's

resource base to generate jobs and secondarily the provision of services to a relatively rural region. The 11 industries are industrial inorganic chemicals (17 percent), industrial organic chemicals (12), electric services (11), gas production and distribution (11), miscellaneous plastic products (9), industrial machinery (9), trucking and courier services, except air (8), cable and other pay TV services (8), hospitals (8), machinery, equipment, and supplies wholesaling (7), commercial banks (7), doctors' offices and clinics (7), sanitary services (7), and engineering and architectural services (7).

The underrepresented industries include 13 in which Appalachia has less than half its share, or 3.6 percent. This composition of this group implies that Appalachia continues to draw financial services from outside the region and/or that it has less demand for such services because the region is less wealthy. The industries are foreign banks (1 percent), motion picture production and services (1), investment offices (1), business credit institutions (2), mortgage bankers and brokers (3), surety insurance (3), security and commodity services (3), fire, marine, and casualty insurance (3), combination utility services (3), banking related functions (3), apparel wholesaling (3), professional associations (3), and business associations (3).

As usual, the situation varies among the Appalachian states and development districts. One state has more than its share of good jobs: they account for 19 percent of Pennsylvania's jobs but 18 percent of the nation's. The good jobs are 17 percent of the Alabama, Virginia, and West Virginia economies, below the nation but higher than Appalachia's 16 percent. At the other extreme are Mississippi (10 percent), Kentucky (11), New York and North Carolina (12), Ohio (13), and Georgia (14). South Carolina, Maryland, and Tennessee are within 0.4 percent of the Appalachian percentage. The districts are far more diverse. Several exceed the national percentage, led by Virginia 12A at 31 percent, and others are far below, including Kentucky 3A and 3J and Mississippi 5D at 3 or 4 percent. The districts in black have higher percentages of good jobs than the nation.

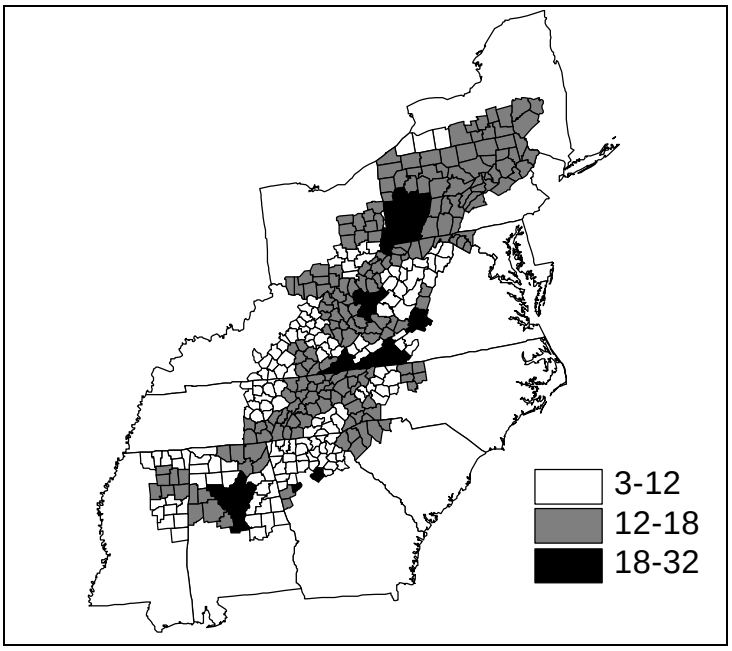


Figure 8: Good Jobs as a Percent of Total Jobs by District, 1992

Exports. The location quotient is a direct measure of whether a place has its share of employment in an industry. A location quotient of 1.0 means a place has exactly its share of the industry, a quotient greater than 1.0 means the place has more than its share of employment, and a quotient less than one means it has less. These inferences come right from the definition of the location quotient. It is the place's share of the nation's employment in the industry divided by the place's share of the nation's total employment.

Regional economists and economic geographers have long used the location quotient to estimate export activity by industry. A region with 10 percent of the nation's coal mining employment and 5 percent of the nation's total employment has a location quotient for coal mining of 2.0. In more simple language, it has twice its share of coal mining employment. Under certain assumptions, the region also has twice what it needs to serve its own needs. Therefore, half its production is available for export to other places, and logically half its jobs are called export jobs because they exist to satisfy the export demand. In this manner, the location quotient creates estimates of exports based on data on the location of jobs.

Location quotients greater than one are also commonly accepted as evidence of a place's competitiveness or comparative advantage. The reasoning is simple. An industry is concentrated or overrepresented somewhere; therefore, that place is a good place for it to do business. The place must have some locational advantages for that industry or the industry would not be over-represented there.

The location quotients reveal that every local development district in Appalachia has a comparative advantage in at least 2 of the 54 growing, high-wage industries, but four districts have a comparative advantage in more than 20 industries. The four are the Birmingham region (1E), the Atlanta region (2D), the Pittsburgh region (9E), and the Charleston, West Virginia, region (13C). Stated differently, every local development district has more than its share of good jobs compared to the nation in from 2 to 27 of the 54 industries. Stated in a third way, every local development district exports the goods or services of at least two of the industries, and one district, Birmingham's, exports the goods or services of half the 54 industries. Figure 9 (on the next page) shows how many exporting industries are in each local development district, but in doing so it also shows in how many industries the district has more than its share of jobs.

Further insight can be gained by counting the location quotients greater than 1.0 by industry instead of by district. This tabulation reveals in what industries the Appalachian districts often have their share of jobs and in what industries they rarely do. Beginning with the latter, although 16 local development districts have investment offices and 34 have motion picture production and services, no district has enough jobs in these industries to attain its national share. At the other extreme, 37 local development districts have more than their share of jobs in electric services, implying that they produce electricity for other places (or that electricity production is more labor-intensive there, perhaps because of the terrain). In all there are 32 industries in which fewer than 10 districts have their share of jobs, 13 industries with 10 to 19 districts, 4 industries with 20 to 27 districts, and 5 industries with 30 to 37 districts.

The frequency with which an industry has its national share of jobs among the local development districts does not indicate its numerical importance as a source of good jobs or export jobs. A case in point is scheduled air transportation. Only two local development districts have concentrations in this industry, but it accounts for almost 11,000 export jobs — 8,000 in the Pittsburgh region (9E) and 3,000 in the Winston-Salem region (7G). In each case, one major employer is the source . (The location quotients are 3.5 in district 7G and 2.5 in 9E, meaning the regions have 3.5 and 2.5 times their share of employment in this growing high-wage industry.)

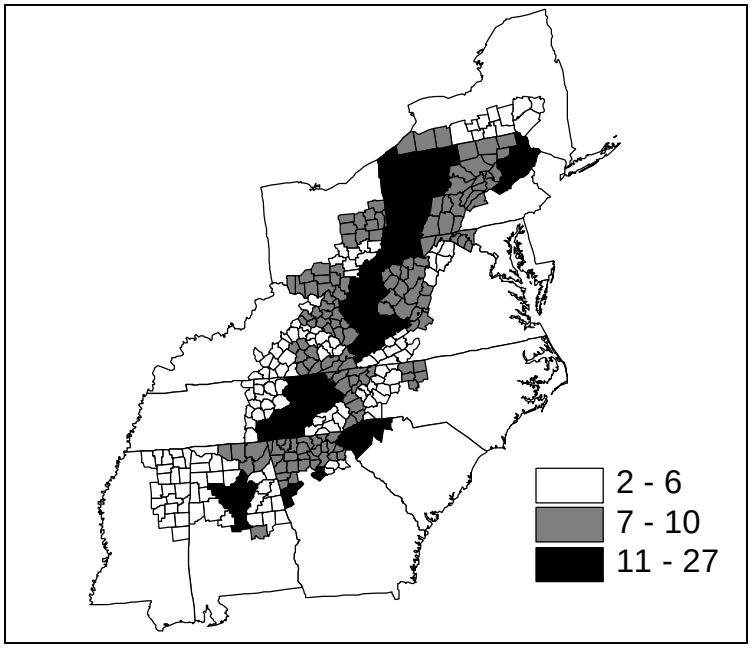


Figure 9: Number of Exporting Industries by District, 1992

The following table lists the 13 industries that create the most export jobs in local development districts.

SIC	Industry		A	B	C	D	E	F
8060	Hospitals	SER	65	20	27	228	369,971	75,821
3080	Miscellaneous plastics products, nec	MFG	60	48	31	11	59,806	30,533
4910	Electric services	TPU	69	56	37	16	50,487	23,158
8710	Engineering & architectural services	SER	66	48	8	12	58,129	22,689
6020	Commercial banks	FIR	69	66	33	14	116,255	18,122
4210	Trucking & courier services, ex. air	TPU	69	63	35	12	111,137	17,602
5080	Machinery, equipment, and supplies	WHL	66	55	15	1	53,776	17,170
2810	Industrial inorganic chemicals	MFG	38	20	20	5	17,528	14,414
2860	Industrial organic chemicals	MFG	35	22	17	7	15,565	11,919
5140	Groceries and related products	WHL	65	54	13	2	48,606	11,501
4510	Air transportation, scheduled	TPU	42	16	2	2	22,279	10,903
8730	Research and testing services	SER	60	37	6	5	22,794	10,478
7370	Computer and data processing services	SER	64	16	4	4	32,124	10,091

KEY: A = the-number of local development districts in which the industry is found,
B = the number of local development districts with more than 100 jobs in the industry,
C = the number of local development districts with location quotients > 1 for the industry,
D = the number of establishments in the industry with > 500 employees in Appalachia,
E = the number of jobs in the industry in Appalachia, and
F = the number of export jobs in the industry summing over local development districts.

Note the diverse circumstances of the industries. In some cases many local development districts have more than their share of the jobs, in some few do. In some cases a handful of large firms may be responsible for the specialization, in one case more than 200 firms.

CONCLUSION

Appalachia remains unable to shed its image as a stagnating, underdeveloped, lagging region, but the image is wrong. Although the economic base of Appalachia remained skewed against growth as recently as 1988-94, Appalachia is not stagnating. On the contrary, much of Appalachia is growing faster than the nation. Appalachia is attracting good jobs that pay well in growing industries. The findings of this study describe a competitive, growing region with a diverse economic base that is generating good jobs in modern industries and is well-integrated into the national economy.

Yet, the region's integration is not complete. Despite all the good news and evidence of progress, parts of Appalachia stand apart still. They defy the new definition of a growing, competitive, and modern Appalachia as readily as they defined the old image of an underdeveloped, lagging, isolated region. These parts of Appalachia are growing substantially slower than the nation in employment and earnings and slower than their industrial composition predicts. They still have not recovered fully from the economic restructuring of a decade ago and from the diminishing employment opportunities in mining and heavy manufacturing. They have attracted or spawned few of the nation's growing high-wage industries and their good jobs.

In all then, this study of the evolving Appalachian economy depicts a diverse region. Parts of Appalachia are dynamic, growing, competitive and favorably integrated into the national and even international economy. Other parts are not. Hanging as a cloud over all the good news of progress and the evidence of economic integration is the fact that too many of Appalachia's people do not share in the region's progress. That was true in 1964, and it is true today. Appalachia contains a region that is among the very poorest in the nation. All Appalachia is not that region, but Appalachia still contains that region.